



Mitsubishi PLC

2001 No.159E

**NEW PRODUCT RELEASE**

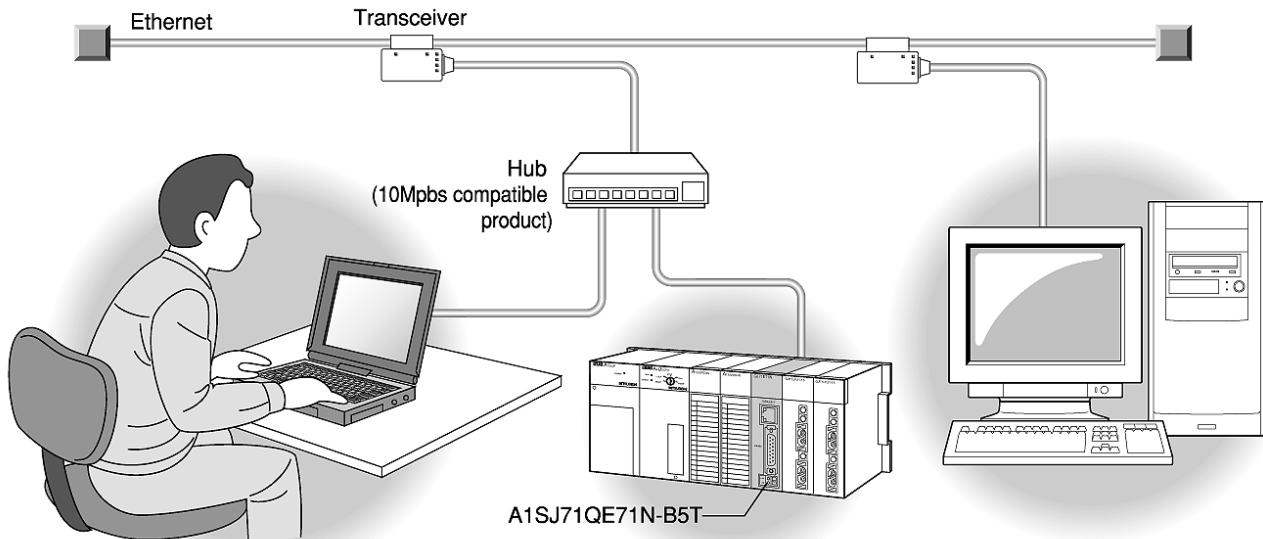
## Ethernet Interface module

QnA Series : AJ71QE71N-B5T, AJ71QE71N-B2, A1SJ71QE71N-B5T, A1SJ71QE71N-B2  
A Series : AJ71E71N-B5T, AJ71E71N-B2, A1SJ71E71N-B5T, A1SJ71E71N-B2

**Available soon!**

**10BASE-T type Ethernet interface modules  
are now available in the QnA/A Series!**

Personal computers can now be easily connected to the PLC by using a hub.



The new module includes the same functions as the old module (\*1).

**With added features:**

- The 10BASE-T connection module has been added.  
QnA series : AJ71QE71N-B5T, A1SJ71QE71N-B5T  
A series : AJ71E71N-B5T, A1SJ71E71N-B5T
- Includes high-speed internal processing, which gives 'about 2-3 times faster' communication processing speed compared to the old module.

\* Refer to [New Features] (1), for the target products of old modules.

## [New Features]

### (1) Increased range of connections to match the system configuration.

With the introduction of the 10BASE-T connection Ethernet interface module (hereinafter, Ethernet module), the PLC and personal computer can now be connected with 10BASE5, 10BASE2, or 10BASE-T.

|            | New product     |                |         |          | Old product     |                |         |          |
|------------|-----------------|----------------|---------|----------|-----------------|----------------|---------|----------|
|            | Type            | Interface (*1) |         |          | Type            | Interface (*1) |         |          |
|            |                 | 10BASE2        | 10BASE5 | 10BASE-T |                 | 10BASE2        | 10BASE5 | 10BASE-T |
| QnA Series | AJ71QE71N-B2    | ○              | N/A     | N/A      | AJ71QE71        | ○              | ○       | N/A      |
|            | AJ71QE71N-B5T   | N/A            | ○       | ○        | AJ71QE71-B5     | N/A            | ○       | N/A      |
|            | A1SJ71QE71N-B2  | ○              | N/A     | N/A      | A1SJ71QE71-B2   | ○              | N/A     | N/A      |
|            | A1SJ71QE71N-B5T | N/A            | ○       | ○        | A1SJ71QE71-B5   | N/A            | ○       | N/A      |
| A Series   | AJ71E71N-B2     | ○              | N/A     | N/A      | AJ71E71-S3      | ○              | ○       | N/A      |
|            | AJ71E71N-B5T    | N/A            | ○       | ○        |                 |                |         |          |
|            | A1SJ71E71N-B2   | ○              | N/A     | N/A      | A1SJ71E71-B2-S3 | ○              | N/A     | N/A      |
|            | A1SJ71E71N-B5T  | N/A            | ○       | ○        | A1SJ71E71-B5-S3 | N/A            | ○       | N/A      |

\*1. Indicates the communication interface for the corresponding unit. (○: Available)

### (2) High-speed internal processing

With the Ethernet module's faster internal processing, the PLC responds much faster when exchanging data with an external device.

The following table shows the minimum transmission delay time (reference value) on the PLC side when using each communication function.

(This is based on the PLC CPU scan time of 10ms.)

| Communication function               | Outline of communication process   | QnA Series  |             | A Series    |             |
|--------------------------------------|--|-------------|-------------|-------------|-------------|
|                                      |  | New product | Old product | New product | Old product |
| Using read/write data in the PLC CPU | UDP/IP communication Communication with binary code data Reading of D0 to D99                | 27          | 43          | 40          | 56          |
| Using fixed buffers                  | TCP/IP communication Communication with binary code data Communication of 1017 words of data | 65          | 118         | 65          | 118         |
| Using random access buffers          | UDP/IP communication Communication with ASCII code data Reading of 508 words of data         | 10          | 42          | 10          | 42          |

(Unit: ms)

## [Function]

### (1) Data communication function (TCP/IP Communication and UDP/IP Communication)

| Communication Function               | Description   |   | QnA series | A series |
|--------------------------------------|---|---|------------|----------|
| Using read/write data in the PLC CPU | Reads/writes PLC CPU data from/to an external device.   |   | ○          | ○        |
| Using fixed buffers                  | Procedure exist   | Reads/writes any data between PLC CPU and an external device using fixed buffer of the Ethernet modules.                      |            | ○        |
| Using random access buffers          | No Procedure  | Exchanges data with multiple external devices, using the Ethernet random access buffers. (no need to specify external device) |            | ○        |
| Using data link instructions         | Reads/writes PLC CPU data of other stations via the Ethernet using data link instructions.      |   | ○          | N/A      |
| File transfer (FTP Server Function)  | Reads/writes files in the local station using the FTP server function, from an external device. |   | ○          | N/A      |

### (2) Other functions

| Function  | Description  |  | QnA series | A series |
|---|--|--|------------|----------|
| MELSECNET/10 relay communication                            | Data communication is enabled over a network system where Ethernet and MELSECNET/10 or multiple Ethernet networks are present.   |  | ○          | N/A      |
| Router relay communication (Router relay function)          | Communicates data via routers and gateways. (Ethernet module does not function as a router.)   |  | ○          | ○        |
| External device existence confirmation                      | Checks whether or not the external device operates normally after communication has been established (open processing).  |  | ○          | ○        |
| Paring open communication                                   | Receiving connection and transmitting connection are opened as a single pair. (For fixed buffer communication.)  |  | ○          | ○        |
| Communication using automatic open UDP port                 | Communication is enabled automatically after initial processing is completed of local station Ethernet module. (Opening and closing by a sequence program is unnecessary.) |  | ○          | N/A      |
| Simultaneous broadcast                                      | Data is broadcasted simultaneously to all stations on the same Ethernet network where the Ethernet module is located. (Using UDP/IP)                                       |  | ○          | ○        |
| Access PLC CPU from GX Developer using Ethernet connection. |  |  | ○          | ○        |

Please refer to the new module's User's Manual for the function versions and serial numbers of the products (CPU module and GX Developer) related to the above functions.

○: Applicable

## [Performance Specifications]

| Item   | Specification                                     |   |                                |   |                                |                               |  |
|--|---|---|--------------------------------|---|--------------------------------|-------------------------------|--|
|  | AJ71QE71N-B5T<br>A1SJ71QE71N-B5T                  |   | AJ71QE71N-B2<br>A1SJ71QE71N-B2 |   | AJ71E71N-B5T<br>A1SJ71E71N-B5T |                               |  |
|  | 10BASE5   | 10BASE-T  | 10BASE2                        | 10BASE5   | 10BASE-T                       | 10BASE2                       |  |
| Transmission Specifications                            | Transmission speed                                | 10Mbps  |                                |   |                                |                               |  |
|  | Transmission method                               | Base band   |                                |   |                                |                               |  |
|  | Maximum node-to-node distance                     | 2500m (8203ft.)   | -                              | 925m (3035ft.)  | 2500m (8203ft.)                | -                             |  |
|  | Maximum segment length                            | 500m (1641ft.)  | 100m (323ft.) (*1)             | 185m (607ft.)   | 500m (1641ft.)                 | 100m (323ft.) (*1)            |  |
|  | Maximum number of nodes per connection            | 100 units/segment   | Cascade connection, maximum 4  | 30 units/segment  | 100 units/segment              | Cascade connection, maximum 4 |  |
|  | Minimum node interval                             | 2.5m (8.2ft.)   | -                              | 0.5m (1.6ft.)   | 2.5m (8.2ft.)                  | -                             |  |
| Send/receive data storage memory                       | Number of simultaneously open connections allowed | 8 connections (Connections usable by the sequence program)                                    |                                |   |                                |                               |  |
|  | Fixed buffer                                      | 1k words × 8  |                                |   | 1k words × 8                   |                               |  |
|  | Random access buffer                              | 6k words × 1  |                                |   | 3k words × 2                   |                               |  |
| Number of occupied I/O points                          |   | 32 points   |                                |   |                                |                               |  |
| 5VDC current consumption                               |   | AJ71QE71N-B5T :0.48A<br>AJ71QE71N-B2 :0.56A<br>A1SJ71QE71N-B5T:0.42A<br>A1SJ71QE71N-B2 :0.64A |                                | AJ71E71N-B5T :0.48A<br>AJ71E71N-B2 :0.56A<br>A1SJ71E71N-B5T:0.42A<br>A1SJ71E71N-B2 :0.64A |                                |                               |  |
| 12VDC external supply power capacity (for transceiver) |   | (*2)  |                                |   | (*2)                           |                               |  |

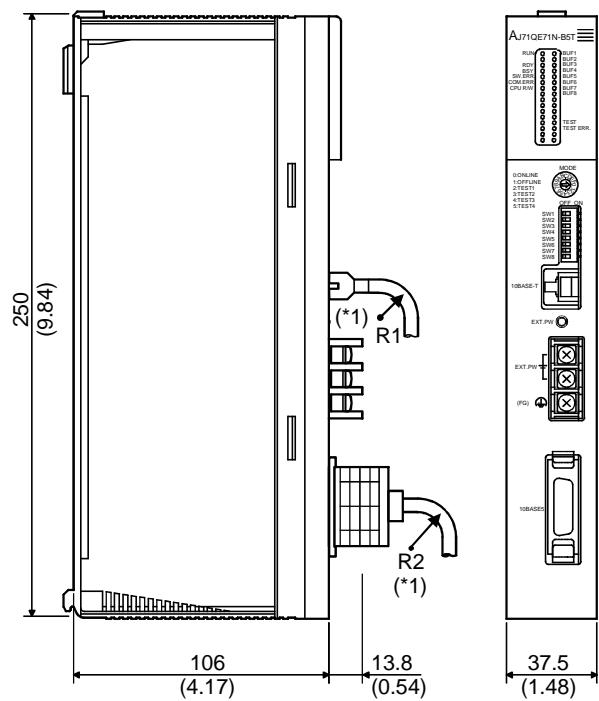
\*1 Between hub and node.

\*2 It is necessary to use a power supply that meets the specifications of the transceiver and AUI cable, considering the voltage drop (maximum 0.80V) in the module.

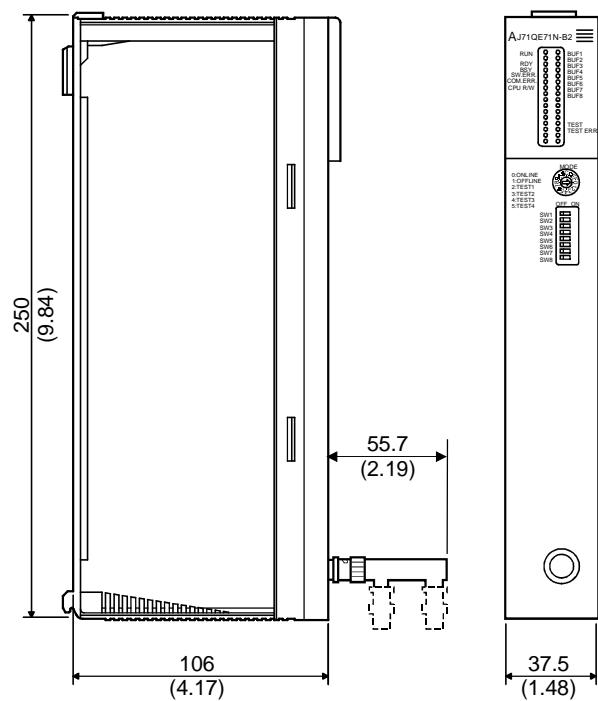
## [External Dimensions]

The following diagram shows the AJ71QE71N-B5T and AJ71QE71N-B2. The dimensions of the AJ71QE71N-B5T are the same as AJ71E71N-B5T. Also, the AJ71QE71N-B2 is the same as AJ71E71N-B2.

For AJ71QE71N-B5T



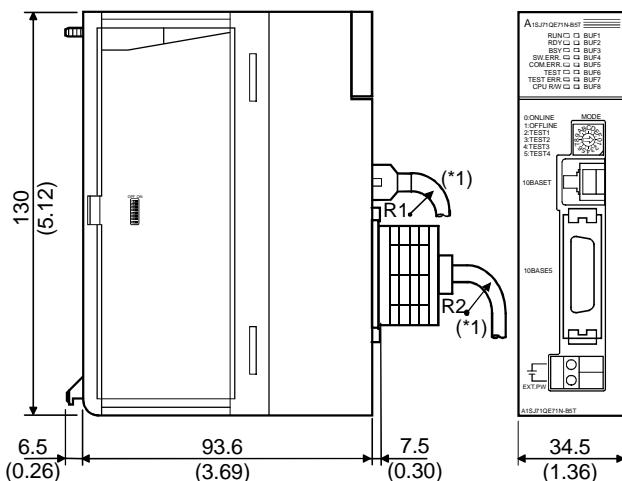
For AJ71QE71N-B2



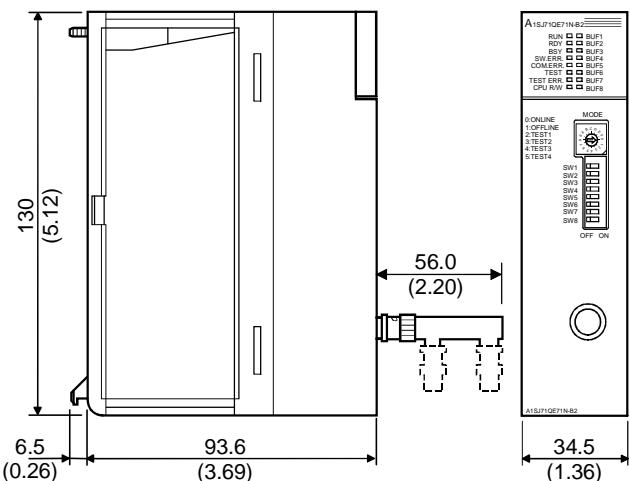
Unit: mm(inch)

The following diagram shows the A1SJ71QE71N-B5T and A1SJ71QE71N-B2. The dimensions of the A1SJ71QE71N-B5T are the same as A1SJ71E71N-B5T. Also, the A1SJ71QE71N-B2 is the same as A1SJ71E71N-B2.

For A1SJ71QE71N-B5T



For A1SJ71QE71N-B2



Unit: mm(inch)

\*1. The bending radius near the connector (reference value: R1, R2) should be four times larger or more than the cable's external diameter when connecting the communication cable.

**[Manual]**

(1) For QnA Series Ethernet module (AJ71QE71N-B5T, AJ71QE71N-B2, A1SJ71QE71N-B5T, A1SJ71QE71N-B2)

| Manual name   | Manual supply status      | IB/SH number | Model code |
|---|---------------------------|--------------|------------|
| For QnA Ethernet Interface module User's Manual(Hardware) | Included with the product | IB-0800182   | 13JT54     |
| For QnA Ethernet Interface module User's Manual           | Sold separately           | SH-080146    | 13JR33     |

(2) For A Series Ethernet module (AJ71E71N-B5T, AJ71E71N-B2, A1SJ71E71N-B5T, A1SJ71E71N-B2)

| Manual name   | Manual supply status      | IB/SH number | Model code |
|---|---------------------------|--------------|------------|
| For A Ethernet Interface module User's Manual(Hardware) | Included with the product | IB-0800203   | 13JT70     |
| For A Ethernet Interface module User's Manual           | Sold separately           | SH-080192    | 13JR45     |

**[Production discontinuation of old products]**

The following old Ethernet modules will be discontinued as follows.

| Product  | Period                 |
|--|------------------------|
| QnA Series :<br>AJ71QE71,AJ71QE71-B5,A1SJ71QE71-B2,A1SJ71QE71-B5 | Through February, 2002 |
| A Series : AJ71E71-S3,A1SJ71E71-B2-S3,A1SJ71E71-B5-S3            | Through December, 2001 |

## Notes

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| Country/Region | Sales office   | Tel/Fax  |
|----------------|--|--|
| U.S.A          | Mitsubishi Electric Automation Inc.<br>500 Corporate Woods Parkway Vernon Hills, IL 60061  | Tel : +1-847-478-2100<br>Fax : +1-847-478-0328   |
| Brazil         | MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda.<br>Av. Rio Branco, 123-15 ,and S/1507, Rio de Janeiro, RJ CEP 20040-005, Brazil                    | Tel : +55-21-221-8343<br>Fax : +55-21-221-9388   |
| Germany        | Mitsubishi Electric Europe B.V. German Branch<br>Gothaer Strasse 8 D-40880 Ratingen, GERMANY   | Tel : +49-2102-486-0<br>Fax : +49-2102-486-717   |
| U.K            | Mitsubishi Electric Europe B.V. UK Branch<br>Travellers Lane, Hatfield, Herts., AL10 8XB,UK  | Tel : +44-1707-276100<br>Fax : +44-1707-278695   |
| Italy          | Mitsubishi Electric Europe B.V. Italian Branch<br>Centro Dir. Colleoni, Pal. Perseo - Ingr.2<br>Via Paracelso 12, 20041 Agrate B., Milano, Italy | Tel : +39-039-60531<br>Fax : +39-039-6053312     |
| Spain          | Mitsubishi Electric Europe B.V. Spanish Branch<br>Carretera de Rubi 76-80<br>08190 - Sant Cugat del Valles, Barcelona, Spain                     | Tel : +34-935-653135<br>Fax : +34-935-891579     |
| South Africa   | Circuit Breaker Industries LTD.<br>Private Bag 2016, Isando 1600, Johannesburg, South Africa   | Tel : +27-11-928-2000<br>Fax : +27-11-392-2354   |
| Hong Kong      | Ryoden Automation Ltd.<br>10th Floor, Manulife Tower, 169 Electric Road, North Point, HongKong   | Tel : +852-2887-8870<br>Fax : +852-2887-7984     |
| China          | Ryoden International Shanghai Ltd.<br>3F Block5 Building Automation Instrumentation Plaza 103 Cao Bao Rd. Shanghai<br>200233 China               | Tel : +86-21-6475-3228<br>Fax : +86-21-6484-6996 |
| Taiwan         | Setsuyo Enterprise Co., Ltd.<br>6F., No.105 Wu-Kung 3rd.RD, Wu-Ku Hsiang, Taipei Hsine, Taiwan   | Tel : +886-2-2299-2499<br>Fax : +886-2-2299-2509 |
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| Singapore      | Mitsubishi Electric Asia Pte, Ltd.<br>307 ALEXANDRA ROAD #05-01/02,<br>MITSUBISHI ELECTRIC BUILDING SINGAPORE 159943                             | Tel : +65-473-2480<br>Fax : +65-476-7439         |
| Thailand       | F. A. Tech Co.,Ltd.<br>898/28,29,30 S.V.CITY BUILDING,OFFICE TOWER 2,FLOOR<br>17-18 RAMA 3 ROAD,BANGKONGPANG,YANNAWA,BANGKOK 10120               | Tel : +66-2-682-6522<br>Fax : +66-2-682-6020     |
| Indonesia      | P.T. Autoteknindo SUMBER MAKMUR<br>JL. MUARA KARANG SELATAN BLOK A UTARA NO.1 KAV.<br>NO.11 KAWASAN INDUSTRI/ PERGUDANGAN JAKARTA - UTARA 14440  | Tel : +62-21-663-0833<br>Fax : +62-21-663-0832   |
| India          | Messung Systems Put,Ltd.<br>Electronic Sadan NO:111 Unit No15, M.I.D.C BHOSARI,PUNE-411026   | Tel : +91-20-7128927<br>Fax : +91-20-7128108     |
| Australia      | Mitsubishi Electric Australia Pty. Ltd.<br>348 Victoria Road, PostalBag, No 2, Rydalmere, N.S.W 2116, Australia                                  | Tel : +61-2-9684-7777<br>Fax : +61-2-9684-7245   |



HEAD OFFICE : 1-8-12, OFFICE TOWER Z 14F HARUMI CHUO-KU 104-6212, JAPAN  
NAGOYA WORKS : 1-14, YADA-MINAMI5, HIGASHI-KU, NAGOYA, JAPAN